

### **REMARKS**

Claims 24-29, 36, 36, 39-42, 44-51, 57, 58, and 61-65 are allowed. Claims 1 and 67-80 stand rejected in the Final Office Action. With this reply, claim 76 has been canceled and new claims 81-84 are offered. Further, claim 74 has been amended to address formal matters. Upon entry of the Amendments, claims 1, 24-29, 35, 36, 39-42, 44-51, 57, 58, 61-65, 67-75, and 77-84 remain pending.

Support for the amended claims and the new claims is found in the specification and figures as originally filed, as discussed further below. Applicants respectfully request entry of the amendments.

### **CLAIM OBJECTIONS**

Claim 75 and 76 are objected to because of informalities. In reply, Applicants have cancelled claim 76 and have amended claim 75 to depend from claim 74. Accordingly, Applicants respectfully request the objections be withdrawn.

### **REJECTION UNDER 35 U.S.C. § 112**

Claims 74 and 76-80 are rejected as failing to comply with the written description requirement. Claim 74 has been amended to clarify that each fastening element comprises a plurality of carbon nanotubes, while claim 76 has been cancelled. Applicants believe that amended claims 74 and 76-80 comply with the requirements of 35 U.S.C. 1.12 first paragraph. Accordingly, Applicants respectfully request the objection be withdrawn.

### **REJECTION UNDER 35 U.S.C. § 102 AND § 103**

Claims 1, 67-69, 72-76, 79 and 80 are rejected as anticipated by or in the alternative as obvious over the Ihara et al. reference (U.S. Pat. No. 5,464,987). Claims 70, 71, 77, and 78 are rejected as obvious in light of the Ihara reference and other secondary references. Applicants respectfully traverse the rejection and request reconsideration.

It is axiomatic that each and every word and limitation of a claim should be considered when determining whether the claim defines patentable subject matter over the disclosure of a reference. It is well established that Applicant is entitled to act as his own lexicographer and to select terminology to define his invention that is not repugnant to the clear and ordinary meaning of the terms used. Written description support for claim and claim amendments need not be found in *in haec verba* from the specification. The words found in the specification may be paraphrased without adding new matter, and in addition the figures may be used to provide support.

The claims rejected in the Final Office Action all contain a limitation that “the nanotubes are so disposed that the fastening elements become mechanically interconnected as the elements are advanced toward one another” (emphasis added). Support for the limitation and illustration of the disposition of the nanotubes is provided, for example, in Figure 1. In Figure 1A, the elements are shown advancing toward one another. In Figure 1B, contact is made between extending nanotubes on opposite fastening elements. Figure 1C shows that a mechanical interconnection is formed as the elements are advanced toward one another. Applicants continue to urge, as they have in previous prosecution, that the limitation described above distinguishes the structure of Applicants' claimed microfastener systems from the disclosure of the Ihara reference.

Figure 1 and Applicants' claim language describes the structure of the claimed microfastening system as one that allows for the mating elements to become interconnected as the elements advance toward one another. In thus distinguishing their structure over that disclosed in the Ihara reference, Applicants are using the word "as" in its conventional sense of "during or at the same time that". Such definition is found in available dictionaries. For example, it is definition 5 of the second entry for "as" in Webster's Third New International Dictionary. As used by Applicants, the claim language means that the structure of Applicants' fastening elements and extending nanotubes are such that they can become mechanically interconnected by the action of the elements advancing toward one another, and no prior or subsequent steps are required.

The microfasteners of the Ihara reference are not disposed so as to become mechanically interconnected by the action of advancing the elements toward each other. The person of skill in the art reading Ihara receives little guidance how Ihara proposes to form the mechanical connection. Referring to Figure 10 reproduced in the Office Action, the person of skill in the art could surmise that mechanical interconnection would be accomplished by first bringing the surfaces close to each other. The Office Action states that Ihara's method of making the microfastening system includes

"harvesting half-tori by dividing the total toroidal molecules in two and then fixing the molecules in opposite directions to the respect of the substrate".

Ihara, column 8, lines 4-13, emphasis added. That is, in Ihara, the action of advancing the elements toward one another does not accomplish the bonding or fastening – it is required to also divide toroidal molecules and then fix them to the substrate. Presumably the fixing occurs while the elements are in proximity; fastening does not occur as the elements are advancing – it only

occurs after the advancing has stopped and further "fixing" steps involving attachment of nanotubes of the substrate.

In light of the discussion above, Applicants disagree with the Office Action that this interconnection

"inherently requires the elements of the connection to be so disposed so as to be mechanically interconnected as the first and second fastening elements comprised substrates and half-tori are joined by advancing toward each other".

To perform the connections in Ihara, the advancing step would have to be stopped and the fastening or connection formed by some kind of attachment of half-tori to substrates while the fastening elements are in proximity. Applicants respectfully submit that the structure of Ihara does not contain extending nanotubes disposed so as to become mechanically connected as the elements are advanced toward one another.

For the reasons discussed above, Applicants urge that the rejected claims are patentable over the Ihara reference. The Examiner is respectfully requested to consider Applicants comments on the language used in the rejected claims and on the structure apparently disclosed in the Ihara reference. Accordingly, Applicants respectfully request that the rejections of claims 1 and 67-80 be withdrawn.

#### **NEW CLAIMS 81-84**

New claim 81 contains language of claim 1, with a further limitation that "the extending nanotubes are disposed so that the action of advancing the elements toward each other results in the mechanical interconnection". Claim 81 is offered to further define the invention and further distinguish it from the structure disclosed in the Ihara reference. As discussed above, the Ihara reference does not disclose a microfastener system wherein extending nanotubes are disposed in

such a way that the action of advancing the elements toward each other alone results in the mechanical interconnection.

Claims 82 and 83 depend from claim 81 and further define and distinguish the invention. In claim 82, no attachment of nanotubes is required for fastening, while in claim 83, the extending nanotubes are disposed so to remain permanently fixed to the element during the mating action of advancing the elements toward each other. Support for claims 81-83 is found for example in Figure 1 and elsewhere in the specification as filed. Applicants respectfully request that claims 81-83 be passed to a state of allowability.

New claim 84 contains some of the language of rejected claim 68, and includes the limitation that “the nanotubes are disposed such that an action of advancing the elements toward each other causes the elements to become mated and fastened”. As discussed above, such a structure including the disposition of nanotubes is not disclosed or suggested by the Ihara reference. For this reason, Applicants respectfully request that claim 84 be passed to a state of allowability.

CONCLUSION

For the reasons discussed above, Applicants believe that all pending claims are patentable over the cited references and respectfully request an early notice of allowance. The Examiner is invited to telephone the undersigned if that would be helpful to resolving any issues.

Respectfully submitted,

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